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Sex roles in a physically handicapped population as measured by the BEM sex-role inventory

Vince. Vegna

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SEX ROLES IN A PHYSICALLY HANDICAPPED POPULATION
AS MEASURED BY THE BEM SEX-ROLE INVENTORY

A Thesis
Presented to the
Faculty of
California State College
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Science
in
Psychology

by
Vince Vegna
January 1983
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Approved by:

Chairperson

Date
ABSTRACT

While sex roles have been assessed in various populations, it has not yet been determined whether handicapped populations differ from non-handicapped populations. It is likely that handicapped individuals do not comprise a homogeneous population and, therefore, factors related specifically to the disability may influence an individual's sex role. In this study, sex roles in a handicapped population were assessed in a questionnaire containing the Bem Sex-Role Inventory, demographic variables, including age, sex, race, marital status, education, and income, and variables related to disability, including type of disability, length of disability, reason for disability, and source of income. A one page questionnaire was included in the newsletter of the California Association of the Physically Handicapped. Respondents returned their questionnaires by mail. Results indicated that handicapped individuals did not differ significantly from Bem's normative sample of male and female college students in the number of individuals categorized as androgynous, masculine, feminine, or undifferentiated. Multiple regression analyses indicated that the femininity score was not significantly related to the demographics or to the variables related to disability. However, the analysis utilizing the mascu-
linity variable indicated that, as expected, males generally scored higher than females. Individuals higher in education scored higher on the masculinity score than did individuals with less education. Finally, individuals who were employed and those who had a shorter length of disability had higher masculinity scores than individuals who were not employed and who had been disabled for a longer period. These results suggest that handicapped individuals may not differ in sex roles from non-handicapped individuals. However, two characteristics of this study suggest that caution should be used in generalizing from this conclusion. First, the sample was more highly educated than the general population. As education was related to masculinity scores it may be that a more typical, less educated handicapped population would exhibit lower masculinity scores and, therefore, would have a different distribution of sex roles than non-handicapped populations. Secondly, it appears that individuals who were more similar to non-handicapped individuals in their employment status and who had possibly not yet adopted a "disabled" role were more likely to show sex roles similar to non-handicapped individuals.
ACKNOWLEDGMENTS

I would like to gratefully acknowledge the invaluable assistance which I received from Dr. David Lutz, in regard to this thesis project and throughout the course of my graduate work. In addition, Dr. Martha Kazlo and Dr. Theron Pace provided me with valuable feedback and skilled expertise; their assistance was, and remains, greatly appreciated. Finally, I would like to thank the faculty, students, and staff of the Psychology Department for their support during my tenure at California State College, San Bernardino.
# TABLE OF CONTENTS

Title Page. ............................................. i
Signature Page. ....................................... ii
Abstract. ................................................ iii
Acknowledgments ........................................ v
Table of Contents ...................................... vi
List of Tables .......................................... vii
Introduction ........................................... 1
Method .................................................... 17
  Subjects ............................................... 17
  Inventory ............................................. 17
  Procedure ........................................... 18
Results ................................................... 19
  Sample Characteristics .............................. 19
  Bem Sex-Role Inventory Scores ..................... 20
Discussion ............................................... 26
Appendix A ............................................... 36
Appendix B ............................................... 38
References .............................................. 39
LIST OF TABLES

Table 1. Type of Major Disability 21
Table 2. Comparison of the Sample Sex-Type Categorizations with Bem's Norms 23
Table 3. Intercorrelations for Independent and Dependent Variables 25
Sex Roles in a Physically Handicapped Population  
as Measured by the Bem Sex-Role Inventory

The concepts of masculinity and femininity have long been viewed, by society at large and psychologists in general, as bipolar ends of a single dimension. Bipolarity and unidimensionality have been implicit in the development of psychometric tests and research methods designed to measure masculinity and femininity. Bipolarity has typically been assumed in three ways: (1) the implication that masculine and feminine responses are necessarily opposite to one another; (2) test item selection being based solely on the ability to discriminate the responses of the two sexes; and (3) the use of a single masculinity/femininity score which placed the individual at some point on a single bipolar dimension. Unidimensionality has been assumed by others in that the constructs of masculinity and femininity have been treated as unitary traits measured by one total score, and scored via the means of algebraic summation along a single continuum (Constantinople, 1974).

English and English (1958) in their definition of bipolarity, as it referred to personality dimensions, espoused a single continuum ranging from one extreme,
through a zero point, to the other. They believed that behaviors defining one end point were opposite to those at the other end, and should thus be negatively correlated. Carlson (1972), in her discussion of the pervasiveness of dualities in psychological theory and measurement, specifically cited the conception of duality in masculinity and femininity as a problem area. She cautioned against the notion of considering masculinity and femininity within the limits of a single bipolar continuum.

General acceptance of the dichotomy between masculine and feminine personality types led Terman and Miles (1936) to attempt experimental validation of the alleged differences between the sexes. They sought to extend the generality of masculinity/femininity (M/F) measurement by increasing the range of demonstrable differences between the sexes. In doing so, they relied on known findings of sex differences (Terman, 1925) in choosing the spheres of behaviors to be included in their test. Test items were selected for inclusion in each exercise based on the extent to which they yielded significant differences between responses of males and females. The final form of the test included seven exercises: ink-blot associations, interest, information, word association, introversion, opinions and emotional and
ethical attitudes. Bipolarity was generally assumed in the scoring of individual items in that an item was scored plus for a masculine response and minus for a feminine response. The low correlations among the exercises (.27 to .49) led Terman and Miles to believe that it was "futile" to search for a general factor via the use of factor analysis. The reliability of the test, median $r = .64$, was high enough that one would generally expect moderately strong correlations among the exercises if the constructs of M/F were of a unidimensional nature.

Terman and Miles (1936) set the pattern which other researchers have since followed. Strong (1936), in the development of the M/F scale of the Strong Vocational Interest Blank, also made the assumption of inherent bipolarity. His scoring procedure was similar to Terman's and Miles' in that each test item was scored plus for a masculine response and minus for a feminine response. Implementing this type of scoring procedure, an individual could be conceptualized as either masculine or feminine, but not both. Franck and Rosen (1949), in the construction of a non-verbal projective test designed to measure M/F, assumed bipolarity. The criterion for measurement of the constructs of M/F in their Drawing Completion Test was the ability to discriminate the
responses of men from those of women. Berdie (1959) and Hielbrun (1964), via the use of adjective checklists, developed verbal measures of M/F in adults. In general, the basis for item selection was the differential response patterns of males and females. Bipolarity was once again an inherent assumption. Finally, the Femininity scale of Gough's California Psychological Inventory (1966) sought to define a personological syndrome that could be conceptualized as masculine at one pole and feminine at the other. Each scale item was keyed true or false for a "feminine" response and the item was scored +1 if the subject answered in the feminine direction. The total score was a summation of all the plus scores.

Constantinople (1974) rejected the traditional definition of M/F as a bipolar unidimensional trait. Rather, she argued for the acceptance of the multiple qualities of M/F. She extensively reviewed the major tests of M/F in adults. The list of reviewed tests included: the Terman and Miles Attitude-Interest Analysis; the M/F scale of the Strong Vocational Interest Blank (SVIB); the M/F scale of the Minnesota Multiphasic Personality Inventory (MMPI); Gough's Femininity Scale (Fe); and Guilford's Masculinity Scale. She demonstrated ways in which their construction and use re-
flected untested assumptions, as mentioned earlier, about the nature of the M/F construct.

Constantinople came to the conclusion that M/F were independent sets of characteristics that can occur alone and/or together. She supported her conclusion via the analysis of implications which were derived from reviewing correlational and factor analytic studies of the major M/F tests. As to the correlational studies, she noted that the reliabilities of the previously mentioned tests were generally high enough so that a moderately strong correlation would be expected between any two M/F tests, if they in fact measured the same construct, and that construct were of a unitary nature. In comparing the M/F scales of the MMPI and the SVIB, low correlations were generally found. Among male groups only, the correlations ranged from .32 to .53 (Nance, 1949; Shepler, 1951; Barrows & Zuckerman, 1960; Himelstein & Stoup, 1967; Wright & L'Abate, 1970), while among female groups only, the correlations ranged from .20 to .55 (Nance, 1949; Shelper, 1951; Klopfer, 1966).

It would be expected that the MMPI M/F scale would correlate highly with the Terman-Miles M/F scale as in both of these scales the major clusters of items reflected interests and emotional attitudes. deCillis and Orbiso (1950), in comparing the M/F scales of the
MMPI and of the Terman-Miles, found correlations of .30 and .36 for separate groups of 129 men and 50 women, respectively. With respect to the same test comparison, Shepler (1951) reported correlations of .65 and .53 for 57 men and 67 women. In a comparison of the Terman-Miles and the M/F scale of the SVIB, Shepler (1951) reported correlations of approximately the same magnitude as he found in the comparison of the MMPI M/F scale with the Terman-Miles. McCarthy, Antony and Domino (1970), using separate groups of 31 men and 29 women, reported correlations of .45 and .42 between Gough's Fe scale and the MMPI M/F scales.

It must be noted that the correlations between any two measures of M/F are significantly higher in mixed-sex groups than they are in the above mentioned single-sex groups. Heston (1948) and Nance (1949), using mixed-sex groups, found correlations of approximately .70 between the M/F scales of the MMPI and the SVIB. Lunneborg (1970), when using a mixed-sex group, found a correlation of .80 between Gough's Fe scale and the M/F scale of the MMPI. One would suspect that the higher correlations of mixed-sex groups were due to the heterogeneity of the sample. While the data suggest the greater power of M/F measures when used in mixed-sex groups, a preponderence of single-sex studies have been utilized.
Although correlational studies provide important information, they are limited in scope. Data about the dimensionality of a particular measure of M/F can be gained via the use of factor analysis. Concurrently, the analysis of test items from several measures can yield information about the dimensions of the constructs in general.

Ford and Tyler (1952) factor analyzed responses to the Terman-Miles and extracted two factors from the matrix for males: (1) insensitivity or toughness, with high loadings from anger, disgust, pity, ethical attitudes, and interests; and (2) interests, with high loadings from books, activity preference, and interest. The first two of three factors extracted for females were very similar to those for males. Ford and Tyler concluded that the Emotional and Ethical Attitudes, and Interest exercises, of Terman-Miles, represented the two factors "fairly well" for both males and females. Based on this evidence, they suggested that M/F was not a unitary trait.

Marke and Gottfries (1967), in the construction of a M/F measure, used the results of the Ford & Tyler analysis in selecting items, primarily from the original Terman-Miles Attitude-Interest Analysis, which would relate primarily to interests and emotionality as the
principle components of M/F. Within-sex factor analysis yielded two factors which appeared regularly: (1) interests, with high loadings from the subscales of occupations, books and hobbies; and (2) emotionality or sensitivity, with high loadings from the pity, disgust and ethics subscales. The results would seem to suggest that the constructs of masculinity and femininity are not unidimensional in nature.

Finally, Lunneborg (1972) found four extracted factors, via factor analysis of 450 items taken from nine measures, which were determined to be common to both sexes. Specifically, these were neuroticism, power, scientific interest and religiosity. Taken together, the reported results of factor analytic studies, as they relate to M/F measurement, imply the existence of a multidimensional framework. Although contradictory evidence has been reported (Maccoby & Jacklin, 1974), this alternative concept would appear to allow for the examination of qualities that men and women may share.

Recognizing that some individuals incorporate the qualities of both masculinity and femininity, Bem (1976) attempted to verify and validate the model of psychological androgyny. The concept of psychological androgyny, a term that denotes the integration of masculinity and femininity within a single individual, implies that it
is possible for an individual to be both assertive and compassionate, both instrumental and expressive, both masculine and feminine, depending upon the situational appropriateness.

In an updated summary of a series of studies, carried out over five years, Bem confirmed Constantinople's conclusion that masculinity and femininity can occur alone and/or together. The Bem Sex-Role Inventory (BSRI) (Bem, 1974) proved to be essential in supporting Constantinople's conclusions. The BSRI treated masculinity and femininity as two orthogonal dimensions rather than as two extremes of a single continuum. Bem found, via the administration of the BSRI, that approximately one-third of a college-age sample was androgynous. That is, the subjects described themselves with an equal number of masculine and feminine qualities. In addition, Bem discovered that another two-thirds of the subjects, one-third males and one third females, were sex-typed; i.e., if an individual's masculinity score were significantly higher than his or her femininity score, that individual would be said to have a masculine sex-role, and as such be sex-typed. Conversely, if an individual's femininity score were significantly higher than his or her masculinity score, that individual would be said to have a feminine sex-role. Spence and Helmreich (1978) suggest that a
fourth category, individuals who may be classified as undifferentiated, must also be considered. These individuals, when classified on the number or strength of their masculine and their feminine sex-role performances, emerge relatively uncommitted to either. They suggest that the psychologically undifferentiated group not be included in the androgynous group. Although the undifferentiated group scores low in both masculine and feminine characteristics, role flexibility is exhibited.

Bem (1976) argued that masculinity and femininity represent complementary spheres of positive behaviors and traits. She noted that it was possible, in principle, to be both masculine and feminine. Masculinity and femininity, Bem argued, must be tempered by one another, and integrated in the formation of an "androgynous personality".

Bem's initial research stimulated further exploration of the phenomenon of androgyne. Silvern and Ryan (1979) used the BSRI to examine the relationship between self-rated adjustment and sex-typing; they found superior adjustment was associated with androgynous vs. traditional sex-typing only among women. Additionally, in the case of every group difference in adjustment, the group with higher self-rated adjustment was also significantly higher in masculinity. Further, groups that did not
differ in masculinity did not differ in self-reported adjustment, "regardless of whether they differed in femininity". Flaherty and Dusek (1980), again using the BSRI, designed a study for the purpose of investigating whether the higher levels of self-esteem and self-concept of androgynous individuals, as compared to masculine/feminine sex-typed and undifferentiated individuals, was due to an integration of both masculine and feminine traits or due only to a high level of masculinity. The androgynous group scored higher than the undifferentiated group on adjustment to the environment. The androgynous and masculine groups scored higher than the feminine and undifferentiated groups on achievement/leadership, which tends to reflect an instrumental role. Androgynous and feminine subjects scored higher than masculine and undifferentiated subjects on congeniality/sociability, which tends to reflect an expressive role.

To date, the issue of masculinity and femininity has not been adequately addressed with regard to the handicapped individual. Due to physical disability, the handicapped individual's sex-role development may be different from that of the non-handicapped individual. Shontz (1962) and Hallenbeck (1964) suggested that the individual experiences an orderly pattern of emotional adjustment to severe disability. The individual's
emotional adjustment to physical disability may be considered developmental in nature with sex-role modification being an essential part of the process. In fact, Christopherson (1968) suggests that the principle developmental task of the physically handicapped individual is effective sex-role modification. He states that the physically handicapped individual must effect a compromise between his or her own self-image and the expectations society derives from its perception of the disabled individual. Traditional sex-roles involve stereotypical behaviors which the individual has integrated into his or her psychological makeup. With onset of physical disability, the individual experiences an alteration of societally sanctioned sex-roles.

For example, Ludwig and Collette (1969) hypothesized the physically handicapped husbands requiring the help of their spouse in activities of daily living (ADL) (e.g., bathing, dressing, getting out of bed, and assistance moving about the house) would be less likely to reflect traditional conjugal roles than would physically handicapped husbands who were not dependent on their spouse for help in ADL. They expected the dependent husbands to express more role flexibility and less role rigidity. The subjects were asked to express agreement or disagreement with three statements that pertained to male conjugal
roles: (1) the man is always head of the household; (2) housework is women's work; men shouldn't do it; and (3) looking after children is women's work; men shouldn't do it. Twenty-five percent of the dependent husbands agreed with Statement 1, whereas 58 percent of the non-dependent husbands agreed with this. Thirty-nine percent of the dependent husbands and 52 percent of the non-dependent husbands agreed with Statement 2, while 19 percent of the dependent and 28 percent of the non-dependent husbands agreed with Statement 3. Only one of the differences was statistically significant (Statement 1 \( p < .001 \)). It must be noted, however, that this was the only item of the three which was specifically related to psychological and interpersonal factors, while the other two questions also addressed physical responsibilities. These responsibilities may be perceived to be hampered by the individual's physical handicap.

The authors stated that obtained differences were found to "hold" regardless of the level of physical limitation. This finding suggested to them that measurable differences were a result of the "dependency factor" and not merely the degree of physical limitation. It must be noted that the subjects were divided, based on the degree of physical limitation, into only two non-specific categories, moderately and severely impaired.
This division appears to be too vague as it does not allow for the potential interplay between degree of physical limitation, dependency and role flexibility.

Skipper, Fink and Hallenbeck (1968) examined the effect of a wife's long-term disability on the marital relationship. They conducted a series of interviews with 36 handicapped women who were between the age of 21 and 60. To be included in the study, the woman's disability must have occurred after marriage and interfered with the active pursuit of homemaking activities. Their results indicated that greater mobility does not automatically result in greater need satisfaction. The correlation between total need satisfaction of the disabled women, as measured by a Perception of Needs Interview Schedule, and mobility, as measured by Christopherson's (1963) revised scale, was low and not significant. Additional findings indicated that the women's physical mobility did not correlate highly with the husbands' total marriage satisfaction, as measured by a Marital Satisfaction Interview Schedule. The authors note the fact that mobility did not correlate strongly with either index of satisfaction, marriage or need. Their findings suggested that greater disability need not necessarily lead to greater frustration of needs and greater strain on the marriage. They speculated that following onset of dis-
ability roles within the marital relationship are redefined and reevaluated. The further suggested that during the period of adjustment, the potential exists for a high degree of role strain and role conflict. Finally, based on their findings, they suggested that greater mobility may lead to greater role ambiguity in that neither the disabled woman or her family knows the extent of her current abilities. On this final point, the authors make the inherent assumption that both the handicapped woman and her family have failed to test the limitations of her current abilities.

As with the research in masculinity and femininity, studies concerning physical disability are subject to inherent problems. As to the former, Constantinople (1974) cites cultural lag, social class, geographic location, education, age and sex-role stereotyping as important influencing factors which contribute to the "dilemma of what is being measured". Trieschmann (1980), in commenting on psychological adjustment to physical disability, argued that age, sex, socioeconomic status and financial security are variables which influence eventual outcomes of research. Bem (1976) noted that situational appropriateness determines the individual's use of his or her masculine and/or feminine qualities. An individual's situational behaviors, as they relate to
sex-roles, may be said to be influenced by the factors mentioned by Constantinople and Trieschmann.

With appropriate consideration given to the variables in both fields of study, research in M/F and in the area of physical disability, the present study was primarily concerned with the possible influence of physical disability on self-reported sex-role behaviors. Specifically, this study attempted to determine if there was a significant difference in reported sex-role behaviors, as measured by the Bem Sex-Role Inventory (Bem, 1974) between handicapped and non-handicapped individuals.

As to the primary hypothesis, it was predicted that physically handicapped individuals would, with a significantly greater frequency as compared to non-handicapped individuals, categorize themselves as being androgynous sex-typed; versus being masculine sex-typed, feminine sex-typed, or undifferentiated sex-typed (Bem, 1977).

In addition, the independent variables of sex, age, race, length of disability, etiology of disability (from birth vs. post-birth onset), education, source of income (employment generated vs. non-employment sources), level of income, and marital status (single, married, divorced) were examined, by the use of stepwise multiple regression analyses, to determine if any were significant predictors of masculinity and femininity scores.
Method

Subjects

The subjects were 130 physically handicapped individuals, 56 males and 74 females, who responded to a questionnaire contained in a newsletter entitled, "New World". The "New World" newsletter is published on a monthly basis by the California Association of the Physically Handicapped (C.A.P.H.). Membership in C.A.P.H. entitles the individual or organization to receive this publication. Membership fees are based on a sliding scale of ability to pay. The circulation of "New World" is approximately 5000, with 3900 copies received by individual members and the remaining 1100 copies being mailed directly to agencies having access to the handicapped community. These agencies include, but are not limited to, independent living centers, major rehabilitation hospital, college campus disabled student services, C.A.P.H. charters, and various public social service agencies.

Inventory

The measure of sex-roles used for this study was the Bem Sex-Role Inventory (BSRI) that was designed by Bem (1974) as an instrument that identifies individuals on the basis of their self-concepts or self-ratings of personal attributes with regard to sex-roles. The BSRI asks each respondent to indicate on a seven-point scale, (1)
Never or almost never true to (7) Always true or almost always true, how well each of 60 attributes describes himself or herself. Twenty of the attributes reflect the culture's definition of masculinity (e.g., ambitious, self-reliant, independent, assertive) and twenty reflect its definition of femininity (e.g., affectionate, gentle, understanding, sensitive to the needs of others). Additional, the BSRI contains twenty neutral attributes (e.g., truthful, happy, conceited, unsystematic) which serve as filler items. The categorization of the 60 attributes which constitute the BSRI appears in Appendix A. The degree of sex-role stereotyping in the individual's self-concept was determined according to Bem's (1977; 1981) revision of her original scoring procedure. Each respondent receives both a masculinity and a femininity score. Those who score above the median of the sample on the sex-congruent scale and below the median on the sex-incongruent scale are defined as sex-typed. Those who score above the median on both scales are designated as androgynous; and those who score below the median on both scales are designated as undifferentiated.

Procedure

The BSRI was printed in the June 1982 issue of the "New World" newsletter. Subscribers were asked to indicate demographic information, fill out the BSRI and mail it to the experimenter. The June issue was mailed during
the third week of the month of May. The subjects were allowed approximately six weeks in which to mail in the responses. The questionnaire, as it appeared in the newsletter, is shown in Appendix B.

Results

Sample Characteristics

Specific demographic information obtained from the responses indicated that 43 percent were male and 57 percent were female. The mean age fell in the 40 to 49 years group, which constituted approximately 22 percent of the total sample. Most other subjects clustered in the following age groups: 30 to 39 years (30 percent); 50 to 59 years (23 percent); and 60 to 69 years (10 percent). Total percentages do not always add up to 100 percent in that the classification of "other" was included in some categories. The sample was almost exclusively Caucasian (94 percent) with approximately four percent being Hispanic and two percent being Black. Approximately 35 percent of the subjects were single, 32 percent were married and 27 percent were divorced. The sample was a highly educated group: 39 percent had completed some college; 17 percent indicated having completed four years of college, while 32 percent had completed graduated school. Approximately 30 percent of the subjects indicated that their main source of income was generated from employment. Government support was listed as the main provider of income by 41 per-
cent of the total sample. Pensions, private insurance, veterans benefits, investments and spousal support constituted the main source of income for 23 percent of the sample. Thirty percent of the same fell in the 0 to $7,000 income level. Other subjects clustered in the following income groups: $7,001 to $14,000 (22 percent); $14,001 to $21,000 (14 percent); $21,001 to $28,000 (12 percent); and $28,000+ (16 percent).

Etiology of disability was accounted for in 52 percent of the total sample by post-birth onset of disease. Approximately 25 percent of the subjects were disabled from birth and 19 percent were disabled via accident. The categorization of the type of major disability appears in Table 1. The polio group was the single largest contingent, comprising 23 percent of the sample. The sample consisted primarily of individuals who had been disabled for some length of time. Sixty-six percent of the sample reported having been disabled for 16 years or more. Clustering occurred in the following groups: 2 to 5 years (9 percent); 6 to 10 years (15 percent); and 11 to 15 years (9 percent). Information which was obtained in two categories, veteran status and rehabilitation setting, was not able to be coded, and thus was not used.

Bem Sex-Role Inventory Scores

The BSRI provides masculinity and femininity scores for each subject. Masculinity scores for the sample as a whole ranged from 2.55 to 6.55, with a mean score of 4.93 and a median of 5.05. The femininity scores for the sample
<table>
<thead>
<tr>
<th>Category Label</th>
<th>Frequency (PCT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Spinal Cord Injury: Quadrplegic</td>
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</tr>
<tr>
<td>2. Spinal Cord Injury: Paraplegic</td>
<td>10.0</td>
</tr>
<tr>
<td>3. Muscular Sclerosis</td>
<td>10.0</td>
</tr>
<tr>
<td>4. Muscular Atrophies/Dystrophies</td>
<td>10.8</td>
</tr>
<tr>
<td>5. Cerebral Palsy</td>
<td>10.0</td>
</tr>
<tr>
<td>6. Arthritis/Bone-Joint Diseases</td>
<td>12.3</td>
</tr>
<tr>
<td>7. Polio</td>
<td>23.1</td>
</tr>
<tr>
<td>8. Other</td>
<td>16.9</td>
</tr>
</tbody>
</table>
as a whole ranged from 2.60 to 6.10, with a mean score of 4.87 and a median of 4.94. Utilizing a split by sample median procedure (Bem, 1977) results indicated that 26.2 percent of the sample were categorized as androgynous sex-typed, 23.1 percent as masculine sex-typed, 25 percent as feminine sex-typed, and 25 percent as undifferentiated sex-typed. Table 2 provides a comparison of the sample, utilizing the sample's and Bem's (1981) medians, with Bem's norms. Chi-square goodness-of-fit tests indicated that these percentages did not differ from the percentages of Bem's normative sample, regardless of which medians were used. The median masculinity and femininity scores obtained in this study were similar to, although slightly higher than, scores found by Bem (1977). Specifically, Bem obtained a sample median masculinity score of 4.89 and a sample median femininity score of 4.76. Additionally, the percentages of subjects classified into the four sex-type categories were similar. Bem found that 24.4 percent of the sample was categorized as androgynous sex-typed, 28 percent as masculine sex-typed, 23.9 percent as feminine sex-typed, and 23.9 percent as undifferentiated sex-typed. Results of the Stanford Normative Sample, as reported by Bem (1981), indicated a sample median masculinity score of 4.95 and a sample median femininity score of 4.90. Results of the scoring found that 24 percent of the sample was categorized as androgynous sex-typed, 29.7 percent as masculine sex-
Table 2
Comparison of the Sample Sex-type Categorizations with Bem's Norms

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Males</td>
<td>Females</td>
<td>Males</td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Masculinity</td>
<td>5.20</td>
<td>4.73</td>
<td>--</td>
</tr>
<tr>
<td>Femininity</td>
<td>4.74</td>
<td>4.98</td>
<td>--</td>
</tr>
<tr>
<td>Median</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Masculinity</td>
<td>5.21</td>
<td>4.75</td>
<td>--</td>
</tr>
<tr>
<td>Femininity</td>
<td>4.70</td>
<td>5.05</td>
<td>--</td>
</tr>
<tr>
<td>Sex-Type</td>
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</tr>
<tr>
<td>Androgynous</td>
<td>21.4%</td>
<td>29.7%</td>
<td>26.8%</td>
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<tr>
<td>Masculine</td>
<td>41.1%</td>
<td>9.5%</td>
<td>39.3%</td>
</tr>
<tr>
<td>Feminine</td>
<td>16.1%</td>
<td>32.4%</td>
<td>12.5%</td>
</tr>
<tr>
<td>Undifferentiated</td>
<td>21.4%</td>
<td>28.4%</td>
<td>21.4%</td>
</tr>
</tbody>
</table>
typed, 23.1 percent as feminine sex-typed, and 23.1 percent undifferentiated sex-typed. Again, these results were similar to those obtained in the current study.

In line with Bem's (1977) suggestion that masculinity and femininity should be analyzed independently, stepwise multiple regression analyses were performed. Independent variables utilized were: sex, age, race, length of disability, etiology of disability (from birth vs post-birth onset), education, source of income (employment generated vs non-employment sources), level of income, and marital status (single, married, divorced). Intercorrelations among the variables are provided in Table 3. Wikenson's (1979) table was utilized to minimize the potential of Type 1 errors regarding the $R^2$.

The analysis in which femininity was the dependent variable, the $R^2$ was not found to be significant. In contrast, the analysis utilizing the masculinity score as the dependent variable was significant, $R^2 (4, 100) = .235, p < .01$. Four significant predictors were found. First was education, $F (1, 100) = 10.91, p < .01$, indicating that the more educated the individual, the higher the masculinity score. Second, length of disability, $F (1, 100) = 5.56, p < .05$, was found to be significant as people with a shorter duration as handicapped evidenced higher masculinity scores. As might be expected, sex, $F (1, 100) = 4.08, p < .05$, was the third significant predictor, as males
### TABLE 3
**Intercorrelations for Independent and Dependent Variables**

<table>
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<tr>
<th></th>
<th>SEX</th>
<th>AGE</th>
<th>RACE</th>
<th>LENDIS</th>
<th>REDIS</th>
<th>EDUCAT</th>
<th>SORINC</th>
<th>LEVINC</th>
<th>SINGLE</th>
<th>MARRIED</th>
<th>DIVORCED</th>
<th>MASC</th>
<th>FEM</th>
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<tr>
<td>Race</td>
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<tr>
<td>Lendis</td>
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<td>-.07</td>
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<tr>
<td>Redis</td>
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<td>-.01</td>
<td>-.32</td>
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<tr>
<td>Educat</td>
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<td>.07</td>
<td>-.03</td>
<td>.01</td>
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<tr>
<td>Sorinc</td>
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<td>.04</td>
<td>-.30</td>
<td></td>
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<tr>
<td>Levinc</td>
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<td>.14</td>
<td>.14</td>
<td>.06</td>
<td>.33</td>
<td>-.54</td>
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<td>-.04</td>
<td>.07</td>
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<tr>
<td>Married</td>
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<td>.26</td>
<td>.15</td>
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<td>.05</td>
<td>-.05</td>
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<td>.37</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Divorced</td>
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<td>-.12</td>
<td>-.03</td>
<td>.06</td>
<td>.07</td>
<td>-.04</td>
<td>-.04</td>
<td>-.47</td>
<td>-.42</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Masc</td>
<td>-.27</td>
<td>.01</td>
<td>-.09</td>
<td>-.20</td>
<td>.04</td>
<td>.40</td>
<td>-.24</td>
<td>.21</td>
<td>.01</td>
<td>-.07</td>
<td>-.07</td>
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<tr>
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<td>.13</td>
<td>-.05</td>
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<td>.16</td>
<td>-.11</td>
<td>-.06</td>
<td>-.00</td>
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</tbody>
</table>

**NOTE.** Abbreviations for variables: Lendis = Length of Disability, Redis = Reason for Disability, Educat = Education Level, Sorinc = Source of Income, Levinc = Level of Income, Masc = Masculinity Score, Fem = Femininity Score.
were more likely to have higher masculinity scores than were females. The final predictor was source of income, $F(1, 100) = 4.33, p < .05$, as individuals who were employed tended to have higher masculinity scores than individuals whose income was not generated from employment; e.g., public assistance, pensions, veteran's benefits, private insurance, investments, and spousal support.

**Discussion**

Do physically handicapped individuals categorize themselves differently in regard to sex-role behaviors than do non-handicapped individuals? This current research indicates that the handicapped respondents to this questionnaire do not differ significantly from normative samples of non-handicapped individuals.

In addition to obtaining similar sample percentages in the androgynous sex-typed groups, the current findings suggest that the remaining sex-typed categories, i.e. masculine, feminine and undifferentiated, also do not differ significantly between handicapped respondents and normative samples of non-handicapped individuals. Several factors may account for this lack of distinction between the sample groups.

First, the questionnaire drew a low response rate. Response rates to questionnaires which require the respondents to return their responses by mail, and without follow-up, are traditionally low. Return rates generally average
in the 15 to 30 percent range (Wallace, 1954). This current study had a 2.6 percent response rate, significantly below what may be considered as an average return rate. Two factors, particular to this population, may have caused an especially low response rate. One is struck by the amount of time and the degree of manual dexterity which are required to complete the questionnaire. These factors take on added significance when the researcher is sampling a population of physically handicapped individuals in that as manual dexterity levels decrease, the amount of time required to complete the questionnaire increases. As a result of these two factors, individuals with "poor" upper extremity functioning may have responded at a lower frequency rate as compared to individuals with minimal or no upper extremity dysfunction. Possibly, the "readership" which responded had few individuals with "poor" levels of upper extremity functioning. These individuals may be different, in regard to sex-role behaviors, from non-handicapped individuals.

In an attempt to increase the response rate from handicapped individuals with "poor" manual dexterity levels, future researchers should consider utilizing Bem's (1981) short form of the BSRI. The short form of the BSRI has only 30 items as compared to the 60 items which constitute the original form. This would make it easier for the handicapped individual with "poor" manual dexterity levels
to comply as it would decrease the amount of time required to fill out the form. Additionally, the short form would reduce the potential influence of fatigue on the individual.

Education level would appear to be another factor which contributed to this lack of distinction between handicapped respondents and normative samples of non-handicapped individuals. As stated previously, the handicapped respondents were a highly educated group as 88 percent of the total sample had completed some college. This suggests that the handicapped respondents and the normative samples of non-handicapped individuals were similar with respect to education levels to Bem's (1977, 1981) normative samples which were comprised of college students. This similarity in education levels between the sample groups may be responsible, in part, for why handicapped respondents did not differ significantly, in regard to sex-role behaviors, from normative samples of non-handicapped individuals.

Previous research (Gough, 1964; Strong, 1943; Terman & Miles, 1936; Webster, 1956) has demonstrated that educational differences influence M/F scores in men and women. Higher educational levels result in increasingly flexible attitudes concerning sex-role stereotyping. Had more handicapped individuals who were of a lower educational level responded, a distinction between the sample groups is likely to have been established.
Two factors which could have accounted for a difference between handicapped respondents and the normative samples, but did not, were age differential between samples and the likelihood of particular items to elicit non-normative responses in a handicapped population. The age differential between the sample groups would suggest that there should have been a difference between handicapped respondents and normative samples of non-handicapped individuals. As mentioned previously, the mean sample age for the handicapped respondents fell in the 40 to 49 years group. Terman and Miles (1936) and Strong (1943) found evidence for increasing "femininity" with age among males. Evidence for changes among females, with respect to these two studies, differ in that Terman and Miles found more support for increasing femininity with age among women than did Strong. Additionally, Hyde and Phillis (1979), in research concerned with androgyny across the lifespan, found trends for the number of androgynous males to be greater with age, and for the number of androgynous females to be fewer with age.

These results and others (Barrows and Zuckerman, 1960; Gough, 1964) appear to suggest that age would be a reliable predictor of masculinity and femininity scores. However, in this study, age was not found to be a significant predictor of masculinity or femininity scores. Perhaps the other factors, previously mentioned, which were assumed to
have contributed to a lack of distinction between the sample groups, served to "neutralize" or "overshadow" the potential influence of age on masculinity and femininity scores of the handicapped respondents.

A more even distribution of ages in the normative samples would also be considered useful. Bem's (1977, 1981) normative samples were comprised of college students and it might be expected that a large percentage of these individuals would be under 30 years of age. In comparison, only 8.5 percent of the total sample in this current study was under the age of 30. The potential influence which may be generated by this apparent age differential necessitates a more balanced age distribution between sample groups.

The likelihood of particular items to elicit non-normative responses in a handicapped population would also suggest that there should have been a difference between sample groups. For example, responses to the masculine items, "self-reliant", "self-sufficient", and "independent", may have reflected an element of conditioning in that rehabilitation medicine has a tendency to reinforce these behaviors. Additionally, responses to the item "athletic" may also have been influenced in that the handicapped individual may have been conditioned not to perceive himself or herself as such. Conversely, responses to the feminine items "sensitive to the needs of others", "understanding", and "compassionate" may have reflected an element of self-
conditioning. That is, the handicapped individual having developed expectations that society at large displays these behaviors toward its handicapped citizens, in turn, believes that he or she should also reflect such behaviors in societal interactions. Further, responses to the item "childlike" may have been influenced, in part, by past experiences with society which reflected stereotypical perceptions of handicapped individuals. Perhaps the handicapped individual, not wanting to be viewed by society as being "childlike", responds in kind.

In reviewing Bem's (1981) item-by-item analysis of sex differences, and utilizing this information as a comparative source of data, the previously mentioned argument does not appear to be supported. The mean scores for the masculine items "self-reliant", "self-sufficient", and "independent" do not appear to differ significantly between handicapped respondents and the normative sample of non-handicapped individuals. The feminine items "sensitive to the needs of others", "understanding", and "compassionate" also did not differ significantly between sample groups. While it cannot be stated conclusively that responses to the items "athletic" and "childlike" differ significantly between sample groups, there does appear to be a trend which would suggest that further exploration is required. Should a significant difference exist in regard to these two items, between sample groups, the apparent age differential be-
tween groups must be taken into consideration. The items "athletic" and "childlike" may be said to be youth oriented and it would be expected that a significant age difference between sample groups could account for the previously mentioned trend difference.

Although there were few differences between the handicapped and normative samples overall, four predictors, e.g. education, length of disability, sex and source of income, were found predictive of the masculinity score.

These predictors suggest an inter-relationship between masculinity and self-esteem. Bem (1977) reported that self-esteem in men and women was significantly related to masculinity. That is, those males and females who were high in masculinity were also high in self-esteem. Females in this high self-esteem group also scored high in femininity, whereas femininity scores for males in this high self-esteem group were not of consequence. It might be that the four significant predictors of masculinity exert an influence on self-esteem, especially in a handicapped population. The presence of a higher degree of autonomous behaviors, in regard to these four significant predictors, may account for this influencing factor.

Autonomy is believed to be an important aspect of self-esteem (Allport, 1955; Maslow, 1968). Perhaps those independent variables which utilize, to a greater extent, autonomous behaviors were better predictors of masculinity.
scores. The four significant predictors would appear to facilitate autonomous behaviors within the individual. For example, males are socialized, with greater frequency as compared to females, to be autonomous. As to education level being a significant predictor, it may be that autonomous behaviors are required of, or developed by, the individual as he or she progresses to higher levels within the educational system. Possibly, being more educated allows the individual a greater "pool" of behaviors from which to select options.

Individuals with a shorter duration as handicapped also evidenced higher masculinity scores. It might be that these individuals, especially during the "acute phases" of disability, are striving toward autonomy with a greater intensity than individuals who have been handicapped for a longer period of time. These individuals in the "acute phases" of being handicapped may attach more significance toward integration of autonomous behaviors within the self-image than would individuals who have already established a balance, in their self-image, between independent and dependent behaviors.

Finally, individuals whose primary source of income was generated from employment had higher masculinity scores. Perhaps masculine behaviors, thought to reflect autonomy, are more highly valued in the employment situation. The individual may respond in kind and seek to develop certain
behaviors which reflect autonomy and thereby have a greater likelihood of being rewarded.

As mentioned previously, no significant predictors of femininity scores were found. Perhaps feminine behaviors, as compared to masculine behaviors, are not as "valued" in regard to the principle developmental task of the handicapped individual, i.e. sex-role modification (Christopherson, 1968). It might be that the development of coping skills necessitated by the onset of physical disability, and possibly related to sex-role modifications, are perceived as being more closely associated with masculine rather than feminine behaviors.

As is common in research of this nature, additional questions, not originally the focus of study, arise. For instance, does an interrelationship between autonomy, self-esteem and predictors of masculinity exist, and is this potential interrelationship unique to a handicapped population? Additionally, are masculine behaviors more "valued" than feminine behaviors in regard to the development of coping skills by the handicapped individual, and if so, why?

Future researchers will also need to obtain a more diverse sample of handicapped individuals in that differences in regard to sex-role behaviors could exist between respondents and non-respondents. Finally, the utilization of a self-report assessment device raises the question of
how accurate the individual's self-perception of himself or herself really is. Can what is being measured be considered "real" sex-role behaviors or could what is being measured be more accurately described as "ideal" sex-role behaviors. It may be that "differential validity" exists for the handicapped individual as compared to the non-handicapped individual. While both may respond the same way on a self-report measure, as in this study, behavioral measures must be taken. This would demonstrate whether responses are expressed in a behaviorally similar fashion for handicapped and non-handicapped individuals.
## APPENDIX A

The Masculine, Feminine, and Neutral Items on the BSRI

<table>
<thead>
<tr>
<th>Masculine Items</th>
<th>Feminine Items</th>
<th>Neutral Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>22. Analytical</td>
<td>32. Compassionate</td>
<td>60. Conventional</td>
</tr>
<tr>
<td>10. Athletic</td>
<td>35. Eager to soothe hurt feelings</td>
<td>15. Happy</td>
</tr>
<tr>
<td>19. Forceful</td>
<td>47. Gullible</td>
<td>39. Likable</td>
</tr>
<tr>
<td>52. Individualistic</td>
<td>26. Sensitive to needs of others</td>
<td>30. Secretive</td>
</tr>
<tr>
<td>40. Masculine</td>
<td>38. Soft spoken</td>
<td>42. Solemn</td>
</tr>
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</table>
Appendix A Cont.

<table>
<thead>
<tr>
<th>Masculine Items</th>
<th>Feminine Items</th>
<th>Neutral Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>34. Self-sufficient</td>
<td>44. Tender</td>
<td>12. Theatrical</td>
</tr>
<tr>
<td>16. Strong personality</td>
<td>29. Understanding</td>
<td>27. Truthful</td>
</tr>
<tr>
<td>43. Willing to take a stand</td>
<td>41. Warm</td>
<td>18. Unpredictable</td>
</tr>
<tr>
<td>28. Willing to take risks</td>
<td>2. Yielding</td>
<td>54. Unsystematic</td>
</tr>
</tbody>
</table>

Note: The number preceding each item reflects the position of each adjective as it actually appears on the Inventory. The subject indicates how well each item describes himself or herself on the following scale: (1) Never or almost never true; (2) Usually not true; (3) Sometimes but infrequently true; (4) Occasionally true; (5) Often true; (6) Usually true; (7) Always true or almost always true.
Dear C.A.P.H. Member:

As a fellow member of the disabled community I have recently become more aware how little we understand ourselves and are understood by others. In an attempt to increase awareness of our needs I offer you the opportunity to help me further expand society's understanding of the disabled individual. In the continuing spirit of the recently completed International Year of Disabled Persons, please give a few minutes of your valuable time and fill out this questionnaire. The results of this master's thesis will be discussed in a future issue of the New World.

Please complete the following section:

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<tr>
<th>Age:</th>
<th>0-19 □</th>
<th>20-29 □</th>
<th>30-39 □</th>
<th>40-49 □</th>
<th>50-59 □</th>
<th>60-69 □</th>
<th>70+ □</th>
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<td>Female □</td>
<td>Veteran □</td>
<td>Non-veteran □</td>
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<td>2-5 yrs. □</td>
<td>6-10 yrs. □</td>
<td>11-15 yrs. □</td>
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<td>Education level, highest grade completed: less than high school □</td>
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<td>some college □</td>
<td>four years of college □</td>
<td>graduate school □</td>
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<td>14,001-21,000 □</td>
<td>21,001-28,000 □</td>
<td>28,000 + □</td>
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<tr>
<td>Name of rehabilitation center: ____________________________</td>
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</tr>
</tbody>
</table>

Please indicate how well each word describes you, using the following scale: (1) Never or almost never true; (2) Usually not true; (3) Sometimes but infrequently true; (4) Occasionally true; (5) Often true; (6) Usually true; (7) Always true or almost always true.

| 2. Yielding | 22. Analytical | 42. Solemn |
| 3. Helpful | 23. Sympathetic | 43. Willing to take a stand |
| 4. Defends own beliefs | 24. Jealous | 44. Tender |
| 5. Cheerful | 25. Has leadership abilities | 45. Friendly |
| 7. Independent | 27. Truthful | 47. Guiltless |
| 10. Athletic | 30. Secretive | 50. Childlike |
| 12. Theatrical | 32. Compassionate | 52. Individualistic |
| 14. Flatterable | 34. Self-sufficient | 54. Unsystematic |
| 15. Happy | 35. Eager to soothe hurt feelings | 55. Competitive |
| 17. Loyal | 37. Dominant | 57. Tactful |
| 18. Unpredictable | 38. Soft spoken | 58. Ambitious |
| 20. Feminine | 40. Masculine | 60. Conventional |

Following the completion of this questionnaire, please return it to: Vince Vegna, Department of Psychology, California State College San Bernardino, 5500 State College Parkway, San Bernardino, CA 92407. All responses will be kept confidential. Again, THANK YOU for your cooperation.
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